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## THE INFLUENCE OF DISTANCE FROM AND PROXIMITY TO AN INSANE HOSPITAL, ON ITS USE BY ANY PEOPLE.

[Read before the American Statistical Association, by EDWARD JARVIS, M.D., Dorchester, Ms.]

An insane hospital is, and must be, to a certain extent, a local institution. People will avail themselves of its privileges in some proportion to their nearness to it. No liberality of admission, no excellence of its management, no power of reputation can entirely overcome the obstacle of distance, expense, and of the difficulties of transporting lunatics, or the objection of friends to sending their insane patients far from home, and out of the reach of ready communication.

The operation of this principle, in some degree, seems probable to any one who gives a thought to the matter; but the facts, the particular history of those institutions, in which the records of the homes of their patients are kept, show that the objection of distance prevails with all of them, and that those hospitals have been and are used by those who live near by, much more than by those who live farther off; and consequently they are practically much more local in their usefulness, than they are intended or are supposed to be.

The facts are our best arguments in this matter, and therefore we begin with the Massachusetts State Lunatic Hospital, at Worcester, in the centre, the heart of the Commonwealth, and at the easiest point of access in the State except Boston. This is a public institution, and is equally open to the inhabitants of all parts of the State, the remote as well as the near.

During the seventeen years of its operation, the Worcester hospital has received 3347 patients, from the several counties in the State, containing, in 1840, a population of 737,699.\*

The following table shows how these patients have been distributed among the counties of Massachusetts.

\* In all the statements, calculations and comparisons referring to population in this article, the enumeration of 1840 is intended, except where otherwise stated. The population has, without doubt, increased in all the sections herein spoken of, and probably in some of them more than others, and especially in the cities more than in the rural districts, since 1840, so that they do not now hold the same relative proportion as they did when the last census was taken. But we have no other data to found these calculations and comparisons upon, and the changes of proportion between the various counties and sections that are compared have not been so great or so general as to militate with the conclusions that have been drawn from them.

*Residence of the Patients in the State Lunatic Hospital, 1832 to 1849.*

Counties.	Population in 1840.	Patients in Hospital.	Population to 1 patient.
Worcester . . . . .	95,313	816	116.8
Norfolk . . . . .	53,148	401	132
Hampshire . . . . .	30,897	155	147
Essex . . . . .	94,987	428	221
Hampden . . . . .	37,366	162	230
Middlesex . . . . .	106,611	374	285
Suffolk . . . . .	95,773	332	285
Bristol . . . . .	60,165	208	289
Dukes . . . . .	3,958	14	282
Franklin . . . . .	28,812	88	327
Plymouth . . . . .	47,373	153	316
Nantucket . . . . .	9,012	26	346
Barnstable . . . . .	32,548	85	382
Berkshire . . . . .	41,745	105	397

Looking at the third column of the preceding table, we see that the proportion of patients sent to the Hospital is generally in inverse ratio of the distance from Worcester.

Middlesex county seems to be an exception to this rule. It is nearer than Essex or even Hampden, and yet it has sent a smaller proportion of patients. Yet it must be remembered, that the McLean Asylum is in this county, and receives many of the insane from the more prosperous families; some, from the northern parts of the county, are sent to the hospital in Concord, New Hampshire,\* and some of the State paupers are sent to the county receptacle at East Cambridge.

But if we compare the classes of counties we see that the effect of the law of distance is strictly carried out.

*Residence of Patients in the State Lunatic Hospital, 1832 to 1849.*

Classes of Counties according to distance.	Population in 1840.	Patients in Hospital.	Population to 1 patient.
Worcester . . . . .	95,313	816	116
Contiguous Counties—Hampshire, Hampden, Franklin, Middlesex and Norfolk } }	256,326	1180	217
Remote Counties—Berkshire, Essex, Plymouth, Barnstable, Bristol, Nantucket and Dukes } }	289,788	1019	284
Extreme Counties—Berkshire, Barnstable and Nantucket } }	82,305	216	381

\* Letter of Dr. Andrew McFarland, Superintendent of the New Hampshire Hospital for the Insane.

In the classification of the counties according to their distance from Worcester, Suffolk is omitted in the third class or the remote counties, because Boston has a lunatic hospital which receives most of her insane paupers, and about one third of the patients in the McLean Asylum, which is within two miles of Boston, are received from that city.

We see from this table, that while the people of Worcester county, being familiar with and well understanding the character and advantages of the Hospital, and having but little obstacle in the facility of access, have sent 1 in every 116 of their numbers to its care, the people of Berkshire, Barnstable and Nantucket, being less familiar with and knowing its character and value less, and having a greater difficulty of access, have sent only 1 in 381 of their numbers. Wherefore the benefits of the Hospital, although freely and equally offered to all, yet have been enjoyed three times as much by the county in which it is situated, than they have been by the remotest counties of the State.

The Maine Insane Hospital was established and opened at Augusta, Kennebec county, in 1840, by the authority of the State, and its advantages are offered equally to the people of all the towns of Maine. No benefit is offered to one part more than to another, and yet proximity and distance make there the same difference in the enjoyment of these privileges as here.

Kennebec county, with a population of 55,804, has sent, during these ten years, 212 patients, or 1 in 263.

The contiguous counties of Franklin, Lincoln, Oxford, Somerset and Waldo, and also Cumberland and Penobscot, which are almost contiguous, and have great facilities of communication with Augusta—the whole of these, with a population of 312,513, sent 602 patients, or 1 in 519.

The most remote counties of Aroostook, Piscataquis, Washington and York, with a population of 133,529, sent only 156 patients, or 1 in 856 of their people, being but little more than one half of the proportion sent by the second class, and less than a third of the proportion sent by Kennebec.

The New Hampshire Asylum for the Insane was opened at Concord, Merrimac county, in 1842, by the authority and at the cost of the State, and invited patients from all the towns.

Since its opening, it has received 146 patients from Merrimac county, out of its 36,253 inhabitants, or 1 in 248.

From the counties of Belknap, Grafton, Hillsboro', Sullivan and Rockingham, contiguous to Merrimac, 405 patients were sent, out of their 168,905 people, or 1 in 412.

And only 88 patients were sent from the most remote counties of Carroll, Cheshire, Coos and Strafford, out of their 79,284 people, or 1 in 900.

Here, then, the difference of the enjoyment of the advantages of the Hospital is almost as 4 to 1 in the nearest and the most distant counties of the State.

The Butler Hospital for the Insane, at Providence, Rhode Island, is not the creation or the property of the State, it belongs to an independent corporation, but its wards are open alike to all who will avail themselves of its advantages.

The reports of this institution inform us only of the residences of the pauper patients who were received during the year 1848. In that year the city of Providence, with a population of 23,171 in 1840, sent 57 pauper patients, or 1 in 406.

The rest of the State, with a population of 85,659, sent only 15 of their pauper lunatics, or 1 in 5,710 of the people.

The Connecticut Retreat for the Insane, at Hartford, is also under the control of an independent corporation, and yet it receives some aid from the State, on condition of admitting some public paupers. To them, and to all others in every town in the State, its wards are equally open.

The reports show the residences of the patients only who were received during the five years ending in 1848.

During this period, Hartford county, from its population of 55,629, sent 131 patients, or 1 in 424.

Five contiguous counties, Litchfield, Middlesex, New London, New Haven and Tolland, from their population of 176,389, sent 250 patients, or 1 in 705.

The remote counties of Fairfield and Windham, from their population of 77,997, sent 55 patients, or 1 in 1418 of their people.

The New York State Lunatic Asylum was built and is supported by the State, at Utica, Oneida county. It was opened in 1843, and people of every county were invited to send their insane patients to its care.

During the seven years of its operations, Oneida county, with a population of 85,310, has sent 236, or 1 in 361.

Eleven other counties, within fifty miles of Utica, with a population of 408,090, sent 600 patients, or 1 in 680.

Seventeen counties, within a circle of from fifty to one hundred miles from Utica, and with a population of 611,367, sent 752 patients, or 1 in 812.

Twenty-nine counties, more than one hundred miles from Utica, with a population of 1,011,450, sent 650 patients, or 1 in 1523 of their people.

The city of New York is not here included, because it has a large hospital at Blackwell's Island for its insane paupers, and also an excellent hospital at Bloomingdale for its more-favored lunatics. This city, with 312,710 inhabitants, in 1840, has sent only 15 patients to Utica.

The State Lunatic Asylum of New Jersey was built out of the public treasury at Trenton, Mercer county, and, in 1848, all the counties were invited to send their insane to its care. During the single year of its reported operations, Mercer county, with 21,502 inhabitants, sent 11 patients, or 1 in 1956.

Five counties, contiguous to Mercer, with 141,589 inhabitants, sent 46 patients, or 1 in 3077.

The other thirteen counties, more remote from Trenton, with 210,215 inhabitants, sent only 31 patients, or 1 in 6781 of their people.

The Maryland Hospital for the Insane is situated in the city of Baltimore, and is open to all the State. It has received large grants from the State, and is under obligations to receive pauper patients at a low price from any county which will send them. The reports do not state how



many patients have been sent from the several counties, but they give the number of pauper patients supported by each county, by the city of Baltimore, and by Howard District, in each of the years from 1843 to 1849. For want of other means of comparison, these numbers of the several years are added together, and the following results are based upon these data. There may be errors in this. It is possible, that the patients from some counties may have been changed every year, and if so, these figures represent the true number of patients which have been admitted. And possibly, some of these patients may have resided in the Hospital during the whole of the seven years, and if so, each one of them is counted seven times. And without doubt some of them have been there more than one year, and are therefore counted more than once. But it is fair to suppose, that there have been as frequent changes and as long residences of the patients from one county or from one class of counties as from another.

Having made this explanation, in order to allow our readers to make what deduction they think proper, on account of imperfection of data, we will give the results of our calculations.

Baltimore city, with 81,055\* inhabitants, sent 162 patients, or 1 in 500.

Twelve counties and Howard District, within forty miles of Baltimore, or of easy access, with a population of 142,854, sent 207 patients, or 1 in 689.

Eight other counties, more than forty miles from Baltimore and difficult of access, with a population of 93,809, sent 35 patients, or 1 in 2680 people.

The Western Asylum for the Insane at Staunton, Augusta county, Virginia, is supported by the State. Under certain conditions both of the State institutions, the Eastern Asylum at Williamsburgh and the Western at Staunton, are open to the people of all the counties of the State. Nevertheless, their patients are mostly received from the districts to which they respectively belong.

In the following comparison, only the counties of western Virginia and those counties of Eastern Virginia, which are nearer to Staunton than to Williamsburgh, are included. All the other counties may be presumed to have sent most, and generally all, of their insane patients to Williamsburgh, and are therefore not here noticed, although many of them have contributed in part to fill the wards of the Western Asylum.

During twenty-two years, ending 1849, Augusta county, out of its 15,072 inhabitants, sent 56 patients, or 1 in 300.

The contiguous counties of Albemarle, Bath, Nelson, Pendleton, Rockbridge and Rockingham, out of their 51,696 inhabitants, sent 123 patients, or 1 in 420.

The next class of eleven counties, includes a single range on the eastern and western sides, towards, and on the slopes of, the mountains, and two ranges on the north and south, in the valley of the Shenandoah,

\* In all the statements respecting the slave States, the white population only is included.

being more easy of access. These counties, out of 79,711 inhabitants, sent 121 patients, or 1 in 658.

The fourth class consists of thirty-five counties, beyond the third class, and within 100 miles of Staunton. These, out of 232,736 inhabitants, sent 254 patients, or 1 in 916.

The most distant class, of twenty-nine counties, more than one hundred miles from Staunton, and generally very difficult of access on account of the mountainous nature of the country, out of 179,535 inhabitants, sent 117 patients, or 1 in 1534 people.

Some distant counties sent no patients to this Asylum during the twenty-two years reported.

The Ohio Lunatic Asylum, at Columbus, Franklin county, went into operation in November, 1838, and its wards have been open to all the State during eleven years.

Franklin county, with 25,049 people, sent 43 patients, or 1 in 582.

Six contiguous counties, Delaware, Fairfield, Licking, Madison, Pickaway and Union, with 126,252 people, sent 127 patients, or 1 in 994.

Twenty-four counties, next beyond those contiguous, and within eighty miles of Columbus, with 443,883 people, sent 406 patients, or 1 in 1093.

Fifty-three counties, eighty miles or more from Columbus, with 933,323 people, sent 799 patients, or 1 in 1168 of their inhabitants.

The Kentucky Lunatic Asylum, at Lexington, Fayette county, is a State institution and open to all its people. The residences of the patients received there during nineteen years, from 1824 to 1842, are shown in the annual reports, but the subsequent reports omit this fact.

Fayette county, with 11,455 inhabitants, sent 128 patients, or 1 in 89.

Six counties, contiguous to Fayette, with 45,265 inhabitants, sent 144 patients, or 1 in 314.

Thirty-seven counties, beyond the last, and within seventy miles of Lexington, with 259,641 inhabitants, sent 415 patients, or 1 in 625.

Thirty-four counties, more than seventy and less than one hundred and fifty miles from Lexington, with 186,159 inhabitants, sent 157 patients, or 1 in 1185.

Fifteen counties, more than one hundred and fifty miles from Lexington, with 86,696 inhabitants, sent only 53 patients, or 1 in 1635 of their people.

The State Lunatic Asylum of Tennessee is at Nashville, Davidson Co., has been in operation six years, and is open to all the counties.

Davidson county, with a population of 17,457, sent 50 patients, or 1 in 349.

Ten counties contiguous to Davidson, or very easy of access, with a population of 114,354, sent 82 patients, or 1 in 1374.

Forty-one counties, beyond the second class and within one hundred and fifty miles from Nashville, with a population of 334,950, sent 103 patients, or 1 in 3251.

Twenty-two counties, more than one hundred and fifty miles from Nashville, and mostly very difficult of access, being among and beyond the mountains on the east, or at the extreme west, with a population of 181,167, sent 40 patients, or 1 in 4529 of their people.

No account of the counties or towns from which their patients are received is given in the reports of the Maine Insane Hospital at Augusta, of the New Hampshire Asylum for the Insane at Concord,\* of the McLean Asylum at Somerville, Mass., of the Vermont Asylum at Brattleboro', of the Bloomingdale Asylum at New York, of the Pennsylvania Hospital at Philadelphia, of the Friends' Asylum for the relief of persons deprived of the use of their reason, at Frankford, near Philadelphia, of the Mount Hope Institution for the Insane at Baltimore, of the Eastern State Asylum at Williamsburgh, Va., of the State Lunatic Asylum at Columbia, South Carolina, of the State Asylum of Louisiana, at Jackson, and of the Indiana Hospital for the Insane at Indianapolis.

We have no report of the Georgia Lunatic Hospital at Milledgeville.

Some of these reports, as those from the Bloomingdale and Pennsylvania Hospitals, show the States, but not the counties or towns to which their patients belong. These show also the State or country in which their patients were born. Some of these are State institutions, and receive only the insane of their respective States; and some of them are open to all the world; and yet the very great majority of their patients belong to the States in which the asylums are situated.

The facts here stated at length and in detail will be better understood when presented together in a table. It must however be borne in mind, that no comparison is intended to be shown between the people of different States in regard to their use of their lunatic hospitals, but only between the people of different parts of the same State living at various distances from their own institutions, to all of whom alike they were equally open and for equal periods of time.

These facts here presented are taken for very different periods in the different States, varying from one year in Rhode Island and New Jersey, to twenty-two years in Western Virginia. No one, therefore, can draw the inference from the statements above, or the table below, that, because Fayette county in Kentucky has sent 1 in 89 of its population, and Mercer county in New Jersey has sent 1 in 1956 of its population, to their lunatic asylums, the people of the former county are in this proportion more ready to provide for their lunatics than the latter. Moreover the reports of some hospitals, as those of Providence and Baltimore, state the residences of the pauper patients only, while others give the residences of all. Of course the facts in the table must differ in these respects in regard to the different States.†

But in regard to all the divisions or counties of the same State, whether near to, or remote from, the hospital, the facts are of the same kind, they are taken from the same period, and the calculations are made on the same basis. The patients are received on the same conditions from all. It is probable, that the causes of insanity are as rife and effective, and the disorder as prevalent, in one part of Massachusetts, or

\* I am indebted to the kindness of Dr. James Bates, Superintendent of the Maine Hospital, and of Dr. Andrew McFarland, Superintendent of the New Hampshire Asylum, for the facts herein stated in respect to their institutions for the insane.

† I must not be understood as endeavoring to show or indicate the prevalence of insanity in any city, county or State, by these statements of the numbers of lunatics sent to the asylums from various districts. I only wish to show the comparative use which the people of different districts of the same State make of their lunatic hospitals.

of New York, or Tennessee, as in another part of the same State. It is certain the hospitals of these States are offered as freely to the people of one county as to those of another. It is reasonable, therefore, to infer, that the people of Worcester county in this State can and do use the advantages of the Hospital, in comparison with those of the remote counties, in the inverse proportion of 116 to 381, or in the direct ratio of more than 3 to 1. Similar inferences may be drawn from the facts presented in the table below, in regard to the other States.

*Number of People in various Districts to each Patient sent to the Lunatic Hospital.*

Asylum.	Period during which Patients were sent.	Counties or Districts at various Distances from the Asylum.				
		County of Asylum.	Next Dist.	3d Dist.	4th Dist.	5th Dist.
Augusta, Me.	1840 to 1849	263	519	856	..	..
Concord, N. H.	1842 to 1849	248	412	900	..	..
Worcester, Mass.	1833 to 1849	116	217	284	381	..
Providence, R. I.	1848	406	5710	..	..	..
Hartford, Conn.	1844 to 1848	424	705	1418	..	..
Utica, N. Y.	1843 to 1849	361	680	812	1523	..
Trenton, N. J.	1848	1956	3077	6781	..	..
Baltimore, Md.	1843 to 1849	500	689	2680	..	..
Staunton, Va.	1828 to 1849	300	420	658	916	1534
Columbus, O.	1839 to 1849	582	994	1093	1168	..
Lexington, Ky.	1824 to 1842	89	314	625	1185	1635
Nashville, Tenn.	1844 to 1849	349	1374	3251	4529	..

It is manifest from this table, that, in all these States, the progressive increase of population out of which one patient is sent to the Asylum, is constant from the centre to the circumference; and that the proportion of patients sent to the asylum out of any definite number of people, diminishes constantly from the circumference to the centre. But this ratio is not equal in the different States, nor for the same increase of different distances in the same State. There are many circumstances that modify it, and influence people in their use of hospitals for their lunatic friends.

Facilities of travel, navigable rivers, canals, railroads, public highways, public conveyances, which render communication easy and cheap, and intercourse familiar, and virtually diminish distance from the hospital, increase the ratio of patients that are sent to it. We therefore find that those counties which are situated along the course of rivers, canals, roads, &c., leading directly to the situation of the hospitals, have sent more patients to these institutions than other counties of equal population and at equal distances, but not favored with these facilities of communication.

Twenty-six counties in New York, situated along the Hudson river and the great lines of canals and railroads, extending from Buffalo to the

city of New York, with a population of 1,111,385, sent 1394 patients to Utica Hospital, or 1 in 790 of their people; while 34 other counties, not on these great and easy lines of communication, and at about the same average distance, with 986,777 people, sent 854 patients, or 1 in 1155 of their population.

Ten counties along the line of the canal, within one hundred miles of Utica, and with a population of 468,269, sent 857 patients, or 1 in 546; while eleven other counties, the most distant and the most difficult of access, with 352,549 people, sent 156, or 1 in 2259.

Ten counties in Kentucky, not including Jefferson county or the city of Louisville, along the two great turnpikes that lead from Lexington, on the north-east to Maysville, and on the north-west to Louisville, out of 49,892 inhabitants, sent 144 patients to Lexington, or 1 in 346; but 17 counties at equal distance towards the south-east, south and south-west, without these facilities of communication, out of 128,417 people, sent 216 patients, or 1 in 594.

In Ohio, eight counties, along the national road from Wheeling to Xenia, sent 211 patients to Columbus, or one in 929 of their people: and twelve other counties, on a line of equal length, running from the north-west to the south-east parts of the State, and with no great highway, sent 102 patients, or 1 in 1001 of their people.

In Virginia, seven counties in the valley of the Shenandoah, between the Blue Ridge and the Alleghanies, having therefore comparatively easy communication with Staunton, which is in this valley, sent 137 patients, or 1 in 514 of their 70,457 population, to that asylum; and all the thirteen other counties, within the same distance from Staunton, but among and beyond the mountains, towards the northwest, west and southwest, sent only 94 patients, or one in 877 of their 82,511 inhabitants.

Taking all these facts into view, we have here indisputable proof of the effect of distance in diminishing the practical benefits of lunatic hospitals to the people of any district. In all these States, these hospitals are as open, and their advantages as freely granted, to the patients from the most remote towns as to those in their very neighborhood. It is not hinted, or even suspected, that the lunatics whose friends reside afar off are not as kindly, as faithfully, and as successfully treated, and at as small a cost, as those whose friends are so near as to keep a watchful vigilance over their welfare.

The only difference between the people of Worcester county and those of Barnstable and Berkshire counties in this State, or between those of Oneida and Chataque counties in New York, or between those of Davidson and Carter counties in Tennessee, in respect to their lunatic hospitals, is, that the former are nearer to, and have easier and less expensive communication with, them than the latter.

A greater proportion of patients seem to have been sent to lunatic asylums from cities and from counties containing large or compact towns, than from the exclusively rural districts.

The city of Boston has its own hospital for pauper lunatics, and has sent 611 patients to it, since its opening in 1839. The McLean Asy-

lum in Somerville, within two miles of Boston, has received about one-third of its patients from that city, or about 734, since the opening of the State Hospital at Worcester, in 1833. Add these to the 332 which have been sent to Worcester, and there are 1677 lunatics, known by the registers of these three hospitals to have been sent from Boston to their care within seventeen years. Some of these patients certainly have been in more than one of these institutions; eleven were transferred at once, in 1839, from Worcester to South Boston; some have doubtless been in all of the three; and therefore they have been counted twice or more, and thus swelled the list beyond their real number. On the other hand, some of the insane of that city have been sent to the Asylum at Brattleboro', Augusta, and other places. These might or might not counterbalance the repetition of the names of those who have passed from hospital to hospital in this State. Yet, making all due allowance for the repetition, and making whatever deduction may be thought proper, it will yet be plain, that the proportion of lunatics sent from Boston to the asylums is far greater than that sent from the rural districts of this State.

The great difference between the proportion of pauper patients sent from Providence and from the other districts of Rhode Island to the Butler Hospital, being as 1 in 406 to 1 in 5710, may be attributed in part to the greater readiness of cities to send them to an asylum, as well as to proximity.

Albany county, including the city of Albany, with a population of 68,593, sent to the Utica Hospital 143 patients, or 1 in 472. Cayuga and Seneca counties, at the same distance as Albany county from Utica, and situated also on the canal, with a population of 75,212, sent 83 patients, or 1 in 906 of their people.

Ohio county in Virginia, including the city of Wheeling, sent to Staunton 24 patients out of 12,842 people, or 1 in 535; while Wood and Mason counties, at the same distance and with similar facilities of travel, sent only 9 patients out of 13,171 people, or 1 in 1452. Richmond city, with 9898 inhabitants, in Eastern Virginia, sent 16 patients to Staunton, or 1 in 618; and the counties of Caroline and Chesterfield, equally distant from Staunton, sent only 11 patients, or 1 in 1326, out of 14,594 inhabitants.

Jefferson county, in Kentucky, including the city of Louisville, sent 64 patients to Lexington, or 1 in 421 of its population; while the counties of Lewis, Campbell, Bullitt and Greene, situated on the same circumference in regard to the centre at Lexington, sent 33 patients, or 1 in 789 of their inhabitants.

Hamilton county, in Ohio, including Cincinnati, besides supplying the lunatic department of the Commercial Hospital in that city, sent to Columbus 1 patient in 1053 of its people; while five other counties, at the same distance from Columbus, sent only 1 patient in 1270 of their population.

The idea of the hospital purposes and its management is familiar to those who live in its vicinity. They know its means, its objects, and its administration; they know the character of its officers and its attendants. They are frequently witnessing its operations and results in the many who

are going to and returning from it, in improved or restored mental health. Whenever they think of the possibility of their becoming insane, the idea of the hospital presents itself to their minds, in the same connection, almost as readily as the idea of their own chambers, their own physician, and the tender nursing of their own family, is associated with the thought of their having a fever or dysentery. And, when any one of their families or friends becomes deranged, the hospital occurs to them as a means of relief, and they look upon it as a resting place from their troubles.

But this ready association of the hospital with lunacy, and this generous confidence in its management, diminish as we recede from it. The people in remoter places know the general facts, but distance lends an obscurity to the notion, and thus the character of the hospital and its administration do not stand before them as the thought of home and domestic arrangements of which they can cheerfully and trustfully avail themselves in any emergency. To them the hospital seems a strange place—perhaps a place of unkind restraint or even of needless confinement, rather than a home of tenderness. Its officers are to them strangers rather than friends; and its attendants, though good and honest men, are not as household comforters and nurses, or even as neighbors, on whom they could almost involuntarily call in time of trouble, and to whom they readily commit the care of their disordered and distressed relatives or children.

Then the unwillingness to be far separated from their suffering or weakened friends operates with many. This is indeed a mere feeling or sentiment; but it is converted into practical facts, and retains some at home, who would otherwise be sent to and cured in a hospital if it were nearer to them. The State Lunatic Hospital, when it is used, is no better to the people of Worcester than to those of Barnstable; but so long as a portion of the people of the remote counties do not feel so, their insane friends are not sent there.

The difficulties and expense of sending lunatics over long distances, or unfrequented and indirect roads, or by private conveyances, are perhaps the most effectual obstacles in the way, and more than any other diminish the number of patients, with the increase of miles that separate them from the hospital.

For these reasons, the towns in the neighborhood of the public hospital in this State have enjoyed more than three times as much of its benefits as the remote towns; and all the eleven other hospitals mentioned in this article, have been compelled to confer their blessings in a similar, and some of them in a much greater disproportion, upon the people of the neighboring than upon those of the remote districts of the States to which they respectively belong.

We think we have here presented facts enough to establish it as a general principle, that the advantages of any public lunatic hospital, however freely and equally they may be offered to all the people of any State, are yet, to a certain degree, local in their operation, and are enjoyed by people and communities to an extent in proportion to their nearness to, or distance from it.

Whenever and wherever the same causes exist, the same effects must



be produced, and any hospital that may be hereafter established must be subject to the same law. Therefore, excepting lunatic establishments in or near some large cities, intended for, and to be supplied by, their people, as that at Blackwell's Island New York city, Hanwell near London, or Bicêtre in Paris, it is morally impossible that any large institution of this nature should be able to diffuse its benefits equally to any large and rural population—and especially if they are spread over any considerable extent of territory.

It was at first proposed to build at Utica, in the centre of New York, one grand lunatic establishment, whose magnificence should correspond with the greatness of the Empire State, and which should offer equal advantages to, and receive one thousand patients from, all parts of the State. There was a seeming grandeur in this plan; but it was a magnificent mistake. It might provide for and receive all the lunatics of Oneida county, and nearly all those of Herkimer and Oswego counties, but not more than a fifth or a fourth of those of Rockland and Clinton. The same is and must be the practical result of every large establishment for this purpose.

These facts ought to be considered by those who propose to create anew any great hospital, or enlarge one that is already in operation. There is a certain size of asylums which is most convenient for management, and the most advantageous for patients. They should be sufficiently large to contain as many patients as are necessary for proper classification and management, and to give employment to all the kinds of officers and attendants. On the other hand, the kind of limit proposed by the judicious and cautious Dr. Bell, in one of his first reports, should be regarded. He thought that the patients should not exceed that number whose characters, wants, diseases and peculiarities the physician could understand, with each of whom individually he could become acquainted, and over whom he could personally exercise all proper and remedial influence. This number, Dr. Bell thought, should not exceed 150. But probably, including old and merely custodial cases, it might be extended to 200 without detriment.

But whatever number is considered as the best for the good of the patients, that should be first regarded, and the size of the hospital planned to correspond to it. And next, it must not be forgotten, that this institution is necessarily and practically local in its operation, and that instead of building up large establishments with the vain expectation of concentrating the lunatics in equal proportions from the people of all districts, both far and near, the only way to diffuse these benefits in any degree approaching to equality, is to divide the curative and custodial means for the insane among the various districts of the State, out of which the patients are to come.

If, instead of enlarging the Worcester Hospital in 1843, the State had built another in the valley of the Connecticut, or in the eastern or south-eastern counties, the circle around the new establishment might have sent to it as large a proportion of its population as that which the circle around Worcester has sent to the one already built.

The New York State Hospital contains 449 patients. If, instead of

building this single and great institution at Utica, the State had built four smaller ones in the northern, southern, middle and western sections of its territory, the circles of fifty miles around each of them would have sent as large a proportion of their patients to their neighboring hospitals, as that around Utica. Instead of one highly favored centre, and a broad margin all around enjoying less than a third as much, there would have been four favored centres, and none so far off as to enjoy so small a proportion of the hospital benefits as the most distant class of counties now does.

The enlargement of any hospital already in existence, and thus inviting more patients to its wards, does not meet and remove the difficulty. If there are still any lunatics in the vicinity who are not already in the institution, the new accommodations are as open to them as to those who are farther distant, and the new invitations reach and act upon those first whose proximity enables them the most readily to understand, and appreciate, and avail themselves of the new advantages. And if the neighboring people have hitherto used the hospital to a certain degree, and the distant people to a less degree, when these advantages are increased they will both send more patients, and there will still be a difference between them.

The annual reports of the Worcester Hospital do not state the residences of patients until 1841, and then the ninth report stated the counties from which all the patients had been received during that and the previous years. Subsequently these facts are stated in each year. We cannot therefore compare the use which the several counties made of the hospital in the earliest years, when it was the smallest, with that made by them in the later years, when it is the largest. But taking the three available periods, which show the greatest recorded difference, we find, that from 1833 to 1841, when the whole average number of patients in the hospital was 170, Worcester county sent 1 in 253 of her average population of 1830 and 1840, while the rest of the State, not including Suffolk, sent 1 in 592 of its people.

During the three years, 1842 to 1844, when the average number of patients was 257, Worcester sent 1 in 657, and the rest of the State sent 1 in 1225.

Lastly, during the four years, 1845 to 1849, when the number of patients was 390, Worcester sent 1 in 373, and the rest of the State sent 1 in 795.

Comparing these differences and reducing them to a common standard, it is seen, that, as often as the State, excepting Worcester and Suffolk counties, during all of these periods, sent 100 patients, Worcester county sent in the first period 233 patients, in the second period after enlargement, 186 patients, and, in the third period after the enlargement, 207 patients, out of the same population. It is thus manifest, that the increase of accommodations does not equalize the distribution of their benefits among those who should enjoy them.

A very similar result is obtained by a similar comparison of the number of patients from the near and remote counties of Ohio, before and after the enlargement of the State Hospital at Columbus.

Thus the histories of the operations of all the hospitals from which the requisite facts have been obtained, concur in proving two principles.

1. That the practical benefits of a Lunatic Asylum are very unequally diffused over any territory, and this inequality increases with the extent of that territory, the near districts enjoying the hospital advantages very much, and the distant districts comparatively little.

2. That facility and difficulty, cheapness and expensiveness of travel, also affect this inequality, more patients being sent from those districts that are connected with the hospital by means of easy and cheap communication than from those which are not so favored.

Consequently a single and great hospital, designed for the lunatics of a whole State, must spread its benefits with much more partiality than two or more hospitals having the same amount of accommodations, but established in different parts of that State, and each intended for the lunatics of a smaller territory.

A hospital is the most universally useful when situated in the centre of that population from which its patients come, and also when placed on some great lines of travel, railroads, public highways, canals, navigable rivers, &c., or, what is still better, when placed at or near the junction of several or many of these means of communication, which extend in all directions and reach all the sections of the country which supply its wards with patients.

These principles and these inferences must not be disregarded by those who now propose to increase the accommodations of the lunatics of Massachusetts. They forbid the adoption of the plan, proposed by some, of enlarging the present, or building another hospital of any sort at Worcester. They should have prevented the last enlargement of that institution in 1843. And they now suggest the inquiries,

1. What section of the State needs most the new hospital accommodations?

2. Where is the centre of the population of that section?

3. Where is the centre of travel; at what point do the railroads, the public highways, the lines of public conveyance meet, through which the patients from all parts of the territory designated, may be conveyed with the least cost of care, labor and money, to the point desired?

The consideration of these questions, and the special location of a new hospital in Massachusetts, must be deferred to another number of this Journal.

#### ACCURACY OF THE SCIENTIFIC EVIDENCE IN THE TRIAL OF PROFESSOR WEBSTER.

*To the Editor of the Boston Medical and Surgical Journal.*

SIR,—The flippancy and careless manner in which remarks have been made in some of the newspapers of other States, concerning the evidence in the Webster trial, has excited some surprise and regret in this city, and the errors into which some of the writers in question have been led have been charitably referred to their want of adequate knowledge on the subject upon which they have written. It is highly

probable that a hasty reading of partial or incorrect reports, imperfectly transcribed into the newspapers of other States, may have caused some persons to fall into error; but it would have been wiser, we deem, for such persons to have examined authentic documents before venturing to question the decision of our highest judicial tribunal. The deliberate and conscientious verdict of a carefully-selected jury, made up to great extent from the prisoner's own choice—the judgment of a full bench of our highly-honorable and most impartial judges, and the evidence of high-minded and conscientious witnesses, should not be so lightly considered by any persons in this country, where the preservation of law and order, and the security of life and liberty, depend on the faithful administration of the laws of the land. It is highly creditable to our legal institutions, and to our common country, that no rank or station will shield a criminal from the punishment of crime, and that our judges are above suspicion of undue bias or any tendency to injustice to any one brought before their high tribunal. They have not to ask who the prisoner is, with what families he is connected, or what office does he hold. Their duty is to see that exact justice is rendered both to the accused and to the public, and to instruct the jury as to the law and the admissibility of evidence.

Attempts have been made in other States to show that Prof. Webster was sacrificed to mere local prejudice existing against him in Boston. This seems wholly unjustifiable; for if there was any bias in public sentiment here, it was in his favor. The greatest care was taken to prevent the public from pre-judging the case, and this was the principal object had in view in holding back from the public the evidence laid before the coroner's jury until the grand jury had made proper investigations in the case and the trial was brought forward.

Premising the foregoing remarks, I would now call your attention to some very erroneous and as I think unjustifiable strictures published in the last number of the Medical and Surgical Journal, by A. C. Castle, M.D. of New York, entitled "Fallibilities of Scientific Evidence in Medical Jurisprudence." I was surprised, Mr. Editor, that you admitted such an article into your pages, especially when you had already, in the heading which you appended to it, shown that the writer knew little concerning the persons whose evidence he presumed to criticize, and did not know enough of the localities to distinguish between a locked-up dissecting-room vault, a "sink," and Dr. Webster's privy; and was not aware that Drs. Wyman, Keep, Harwood, Tucker and Codman, are all well-educated medical gentlemen, familiar with human anatomy, and that "Dr. Morton" is not *universally* regarded "as a well-educated medical man" or a "talented dentist."

I shall not trouble myself or your readers in showing up the "*incongruities*" in the evidence of this last-mentioned person, for they were sufficiently obvious to the court and jury, as well as to the audience present when that testimony was given, nor will Dr. Keep think it worth the time to make any remarks upon it. My object at present is to show Dr. Castle that he is in error concerning the testimony of that distinguished anatomist, Dr. Jeffries Wyman, and that of the corroborating witnesses whose opinions coincided with his in relation to the method of detecting the presence of blood. If Dr. Castle is, as I suppose him to be, a well-educated medical man, he must have learned, in the course of his studies, that blood is a regular organism, as readily detected by means of the microscope as any other organic structure, and that the size of the blood

globules or discs varies with the species of animal from which the blood is taken.

It was decided by the medical examiners sent to make investigations at the Medical College, to commit the examination of any spots supposed by the police and coroner's jury to be blood, to the microscopic investigations of Dr. Jeffries Wyman, whose skill they were fully aware of in any researches of this kind. Dr. W. did examine all the spots in question, and with admirable skill and sagacity discriminated at once between tobacco spittle and blood, pointing out with faithful accuracy which spots were blood and which tobacco spittle, and showing by the most irrefragable proofs that the spots on Dr. Webster's pantaloons and slippers were really well-characterized blood, having its perfect organic structure. He proved beyond question that the microscope did afford the most conclusive evidence with regard to the presence of blood, and fully justified the opinions on that point expressed by the chemical witness. It is true that a chemist might have arrived at a highly probable conclusion by his methods of operating, that the drops in question were blood; but he might know enough of his business to justify his preference for a microscopic examination of blood over the usual chemical analyses or tests employed by chemists.

Dr. Wyman did *not* state that he could distinguish *human* blood from that of all other animals, but that he could distinguish it from that of *some* animals, and gave his reasons for that opinion in court. He had nothing to do with any examination of blood in the Robinson case in New Jersey, nor with that of Adams in the Colt case in New York, and I cannot conceive why Dr. Castle brings up those cases, which, if they show anything, simply evince the superiority of Dr. Wyman's determinations and the greater reliability of his evidence. Neither he nor the other witnesses in the Webster case had anything to do with the exploits of Dr. Lardner with his "magnified mosquito rhinoceros," nor with poisons administered by Madame Lafarge to her husband in France, nor do they care whether Dr. Castle corrected Mons. le Prof. Orfila or not in his modes of discovering poisons; but we congratulate Dr. C. on the fact he alleges, that his "objections attracted the attention of Orfila," for we are not devoid of national pride, and should be glad at any time to learn that the distinguished French Professor of Toxicology was able to derive some hints from Dr. Castle.

We would also express our obligations to Dr. C. for the information he has vouchsafed us respecting the numerous valuable medicines he finds in beer and adulterated champagnes, and would suggest that the proportions of those valuable drugs be regulated by law, so that medicated beer and champagne should become a part of our already large list of remedial agents. I have consulted a large number of brewers, who inform me that rum made from West India molasses is a much cheaper intoxicating agent than any of the high-priced drugs which Dr. C. finds as ingredients in beer. But really, Mr. Editor, I cannot divine what Dr. C. is driving at in all this parade of chemical learning. What has it to do with the trial of Dr. Webster? Who alleges that Dr. Parkman was poisoned by Dr. Webster? I do not find any such count in the indictment. With regard to his general question, "*Who ever heard of a chemist discovering any other poison than that poison which he was directed to search for?*" I can answer, that if Dr. C. knew anything of the history of chemical researches in cases of suspected poisoning, he would have known that in nine out of ten cases, when the chemist searches for poisons in suspected poisoning,

he reports that no poison is discovered; and most frequently the chemist has no other directions than to search for poisons, without having his attention called to any in particular. Dismissing this subject with a caution to Dr. C. to be more careful before he again publishes assertions or insinuations of this character, I would next invite your attention to the misrepresentation which has been made concerning Dr. Wyman's testimony respecting the fractured skull-bones found in Dr. Webster's furnace. Dr. Wyman *never testified that the skull had been broken during life*, but that the skull appeared to have been broken *before it was calcined*. This was undoubtedly the fact, and any one may by trial satisfy himself how easily such a fact is determined. The rough and cellular edges of a burnt bone at once are distinguished from the smooth even fracture of a recent bone containing its natural cartilage. Let any one try the experiment, and he will find no difficulty in distinguishing a bone broken in its recent state, from one broken after calcination.

As to the recognition of the artificial teeth of Dr. Parkman by Dr. N. C. Keep, I would remark that it is believed no possible mistake could have taken place in this matter. The teeth were in blocks of peculiar form, and exactly fitted the mould on which they were originally prepared. Dr. Keep knows the teeth which he makes as well as any mother knows her own children. All the circumstances and facts detailed by Dr. Keep, give a certainty to his identification of the teeth, which places the question beyond all possible doubt; and every one in the court room, so far as we can learn, was perfectly convinced that Dr. Keep could not be mistaken in the fact that *those were the teeth he made for Dr. George Parkman*. Without further comment I beg leave, Mr. Editor, to refer you to the full testimony of Dr. Keep, as given by the phonographic reporters of the trial. That only one witness should be called to rebut the testimony of Dr. Keep, shows most plainly in this community that it was difficult to procure other rebutting evidence—a fact that speaks volumes in favor of the universal conviction in the profession that Dr. Keep could not be mistaken. The calling of this witness, however, afforded the government an opportunity of sustaining the evidence of Dr. Keep by that of three [*not five*] other most eminent surgeon dentists of this city, men whom we would inform Dr. C. are well acquainted with “the known physiological laws governing the animal system, and their action upon the human jaw,” as well as the chemical laws acting on “a piece of burnt quartz, silix or feldspar.”

Dr. Castle's remarks on the “strange infatuation” in neglecting to bring science to bear with “*fatality upon* Littlefield's evidence with regard to the sink,” has already been disposed of at the beginning of this article, and we need only point Dr. C. and your readers to the evidence of Mr. Littlefield and to the corroborative testimony, to satisfy him and them that the testimony of Mr. Littlefield is a simple and honest statement of facts known to him. It is not to be supposed that Mr. Littlefield, who does not profess to be a chemist or even an educated man, should select the most appropriate laboratory phrases. It was enough that he made his evidence clearly understood by the Court and Jury, and satisfied them that he was an honest witness. The whole of Dr. Castle's reasoning about the “sink” is absurd, for he does not know what he is writing about, and will do better to devote a little more attention to the *evidence* before he again attempts to enlighten the public with learned discussions as to the best methods of collecting carbonic acid gas. For his information, I would state that the

place where a portion of Dr. Parkman's remains were found, by making a hole in the brick wall, was Dr. Webster's laboratory *privy*, in no way connected with the dissecting room vault; that the air was good enough in this thoroughly washed *privy*, where the tide rises and falls regularly; that the gaseous emanations which were the subject of conversation between Dr. Webster and Mr. Littlefield, were in the dissecting-room vault, to which Mr. Littlefield alone had the key.

In conclusion, Mr. Editor, let me advise those who live at a distance from the scene of this dreadful murder, not to meddle with facts that they have but a very imperfect knowledge of. They do not help Dr. Webster's case by their lucubrations, but only make it worse. Dr. W. has friends here, who will do all for him that is in their power to do, and every one would be delighted to learn any fact that would tend to mitigate the crime of which he is convicted. This I believe is the general wish of all the medical witnesses, who were anxious that evidence should be discovered which would exculpate him from the dreadful charge made against him.

A MEDICAL WITNESS.

Boston, April 12, 1850.

## THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, APRIL 17, 1850.

*A New Test for Cod-Liver Oil.*—It has been discovered that if pure nitric acid is poured upon the true cod-liver oil, in a short time it will change its color to a very delicate carmine red; whereas if it be impure, or mixed with other fish oils, the color will be a dirty red or brown. Lard oil is much used in the adulteration, and the acid has none, or a very imperfect action upon it. When the acid is first poured upon the oil, it forms a disc, and it is around the margin of this disc that the color is first discoverable. By gently agitating the mixture, the whole will change from a pink, to the red color of carmine. White saucers are the best vessels for testing it in; and the quantity of the material to be used, is an ounce of the oil to about a drachm of the acid. It seems to be the best test that we have for the present; and if a fair trial of the peculiar virtues of cod-liver oil is to be had, it is well we should possess it in its utmost purity.

*Universal Formulary.*—Very rarely is a work combining so many advantages for the student and young practitioner, placed at their disposal. It is entitled "A Universal Formulary, containing the methods of preparing and administering officinal and other medicines: the whole adapted to physicians and pharmacutists," by R. Eglesfield Griffith, M.D., Philadelphia, and is published by Lea & Blanchard. Literary industry, which seems propagated from one author to another, and from one generation to another, in Philadelphia, is plainly manifest in the works of Dr. Griffith. We have reflected with surprise upon the prodigious amount of labor he has already accomplished. Although this is a simple compilation, it is really admirably executed, and will be found worthy of patronage. It is a volume of 567 octavo pages, not one of which but was required to give completeness to the undertaking. The enterprise deserves active encouragement, and it should be given with unstinted measure. Most cordially we recommend this Universal Formulary, not forgetting its adaptation to druggists and apothecaries, who would find themselves vastly improved by a familiar acquaintance with this every-day book of medicine.

*Physic and Physicians.*—An annual address, delivered before the Alabama State Medical Association, by Wm. O. Baldwin, M.D., one of its Fellows. Dr. B. commences with a condensed history of the practice and practitioners of medicine, from Sydenham to the present day, which is reviewed in a manner highly creditable to him. The irregular practitioner, with his procedures, is fully illustrated; and if any one of that class had the misfortune to be one of the audience, and a listener to his eloquence, he must have felt as Judas did after the betrayal of his master.



It is due to Dr. Castle that the following note should appear in the present number, although crowded into a narrow compass by papers previously received. The reply to his article in last week's Journal, published to-day, by "A Medical Witness," was in type before the receipt of this explanatory note, and needs no other remark here than an expression of our regret that the able writer should have preferred withholding his name from the public.

*Palinam qui meruit ferat.*—To THE EDITOR, &c. Dear Sir,—I will esteem it a particular favor, if you will permit me to explain away that portion of your introductory remarks, referring to certain observations in my article upon the "Fallibilities of Scientific Evidence," &c. published in your Journal of the 10th inst. I would most emphatically assure you, that I had not the remotest idea of "calling in question the anatomical knowledge" of those gentlemen, called upon to give the evidence of their experience with regard to the extension of dental science for the identification of teeth, as presented in the case of Dr. Webster. I instinctively, as it were, made the inquiry, "Were these gentlemen anatomical (medical) surgical dentists as well as mechanical dentists?" from the fact that we have in the city of New York upwards of two hundred dentists, of which number about 5 per cent. have received a medical education, and I concluded that the same state of dental knowledge existed in Boston. Under these circumstances I penned that inquiry, deeming it to be of vital importance that something more was necessary in deistical evidence than the mere outlines of mechanism, however unique and excellent they might be. So far from reflecting upon or questioning their professional attainments, I can assure you that it afforded me much pleasure to have my question *satisfactorily* answered, and to learn that they are not only medical men, but gentlemen of high professional reputation, holding a distinguished position in the estimation of the Boston public. If you will refer back to vol. 37, No. 14, page 278, of your Journal, you will find that I there expressed what my feelings always have been—the highest respect for my "Eastern" co-laborers in the mysteries of the dental art—in the following sentence: "We all know that the New-England States have produced the most eminent, successful, and skilful dentists in this country." I do not deem any apology necessary for the language I used in the above named paper, although I regret to find that its diction is capable of admitting an implied doubt upon witnesses, or otherwise a dissatisfaction with the dental evidence. Whatever different opinions may exist upon this point (and the dental profession seems about equally divided) I do not deem that the honor, truth or integrity of those giving their experience as evidence, is in any way compromised. The difficulty only presents itself in another shape. "When (!) doctors disagree, who (!) shall decide?" Is it not due to the unfortunate gentleman now immured in a cell under sentence of death, that he should have the benefit of any doubt? I sent that paper from me, being somewhat hurried, without revising, or I should have framed the language and manner of expression more congenial to the pages of your ably conducted Journal, and more satisfactory to myself—inasmuch as I omitted (in my hurry) two important points on prussic acid and arsenic acid.

New York, April 11, 1850.

Very respectfully,

A. C. CASTLE.

*Medical Miscellany.*—The report of the City Physician to the Boston Board of Aldermen, shows that he has vaccinated, during the last 3 months, 1630 persons. One paper states it to be 8638—a number almost incredible, and without precedent. As the account is from a newspaper report of the doings of the city officers, it is presumed to be incorrect.—Dr. J. V. C. Smith, editor of this Journal, has been elected an honorary member of the Medico-Chirurgical College of Philadelphia.—At the Commencement of the Jefferson Medical College, Philadelphia, March 9th, the Degree of M.D. was conferred on 211 graduates.—A physician in Maine writes—"The Webster murder has confounded us all 'down east.' Nothing has ever more astonished us. I begin to fear myself that I may do some terrible deed, whether I would or not. May God save us! and have mercy on poor Webster."—There were killed on the rail-roads in Massachusetts, the past year, 64 persons, and 102 more or less injured.

To CORRESPONDENTS.—The article in to-day's Journal, by Dr. Jarvis, crowds from our pages the favors of many correspondents, as well as much editorial matter. It will be found, however, to possess much interest; and the statistics which with characteristic industry Dr. J. has here collected, are worthy of the serious consideration of any community among whom the construction of new lunatic asylums is contemplated.—Since last week, communications have been received from Dr. A. L. Peirson, Salem; Dr. John Ware, Boston; Dr. J. D. Mansfield, So. Reading; Dr. H. Lindsay, Washington, D. C.; and Dr. J. A. Adams, Kalamazoo, Mich.

MARRIED.—Dr. F. Laue, of Exeter, N. H., to Miss C. A. Appleton, of Portland, Me.—At Columbia, S. C., Dr. Chas. H. Miot, to Miss A. Bell.

DIED.—At Syracuse, N. Y., Dr. John W. Adams, 54; Dr. John Taylor, 49.—At Washington, D. C., Dr. Alexander McWilliams, 76.

*Deaths in Boston*—for the week ending Saturday noon, April 13th, 82.—Males, 37—females, 45. Abscess, 1—inflam. of bowels, 1—inflam. of bladder, 1—consumption, 14—convulsions, 2—child-bed, 1—dysentery, 1—diarrhoea, 1—dropsy of brain, 6—erysipelas, 3—typhus fever, 2—scarlet fever, 2—lung fever, 5—brain fever, 2—gangrene, 1—hooping cough, 3—infantile diseases, 4—inflammation of the lungs, 6—marasmus, 5—old age, 2—purpura, 1—palsy, 1—pleurisy, 1—smallpox, 9—teething, 6—unknown, 1.

Under 5 years, 35—between 5 and 20 years, 8—between 20 and 40 years, 24—between 40 and 60 years, 6—over 60 years, 9. Americans, 40; foreigners and children of foreigners, 42.

*Dr. Webster's Address.*—The Chief Justice, before his charge to the jury, having informed Dr. Webster of his privilege of making any remarks, he arose, and delivered the following address to the Court.

"I feel grateful to the honorable Court for this courtesy, for I should like to give a full explanation of the vast net-work of circumstances which have been arrayed against me, and have been crushing me for many months. But it would consume much of the valuable time of the Court, nor do I know that my strength would be equal to it. Nine-tenths of what has appeared here, I think I could explain if I had had a proper opportunity; if I could have seen and known what these people were thinking and doing at the times they have testified about. In nine cases out of ten, I could have given a satisfactory explanation of the circumstances which have been so unfortunately and completely distorted against me here. I think I had evidence which, with my explanations, would have cleared up these suspicious circumstances, and my innocence would have been entirely established. But my lips have been sealed. I was in the hands of counsel, who were highly recommended to me, and I deferred to their superior judgment, and they did not think fit to act upon my suggestion. I have placed in their hands the testimony necessary to explain very many things which have pressed most against me, but they have judged proper, in some cases, to disregard my wishes and instructions. If they had done so, many things would have been cleared up, which will now be misunderstood, because they have been perverted by the witnesses, through their imperfect knowledge. They have not thought proper to bring forward this testimony. It would have explained much that the Commonwealth now objects against me.

"But even now I will endeavor to correct one statement that has been urged here, taken from that letter to my daughter, in which I requested that my wife should not open a bundle. That has been greatly misunderstood; but I can fully explain it. I had read in one of that kind of papers that are distributed in the jail, that I had purchased some oxalic acid, which was supposed to be for the purpose of taking out blood stains. It occurred to me that it must mean some citric acid, which my wife asked me to procure for her, to be used for some domestic purposes. I did not get it the day she first requested me to, and she laughed at me when I returned home from Boston for having forgotten her request. The next day, which was Friday, I did get it for her, at Mr. Thayer's, under the Revere House, about 12 o'clock, and carried it home, and gave it to her. It was from what I read in the paper that I supposed it might be necessary to have the package preserved, and that was the package I wrote about. I wanted it kept for evidence. It had no reference to the notes which were placed in the trunk by Mr. Cunningham, I understood.

"I wish to point out another circumstance—a mistake, though an unintentional one, I have no doubt, in the testimony of Rev. Dr. Parkman. But I must say he has not done me justice. He introduced the subject of the aberration of his brother's mind, and I think he will recollect it, when I recall the conversation to his mind. He will recollect that he asked me if a common looking laboring man was with his brother when he came to the college, and he also asked me if he had any lettuce in his hand, and I answered no to both these questions. I told him I did not notice any lettuce.

"Then as to the nitrate of copper, or nitric acid. It must be well known to persons acquainted with chemistry, that I wanted it for my lectures, in which I explained and exhibited the changes in the air produced by the gases. The blood, too, was used in the lectures. By means of gas, it could be changed from its dark color to the bright red.

"It is said that I have been calm; but if I have been so, I have not felt so. In one sense I am calm. My trust is in God and my innocence. My counsel have advised me to keep calm. I had the money to pay Dr. Parkman. With regard to the money, I can say, that I was in the habit of laying aside money from time to time to meet Dr. Parkman's payment. The money I had, I took out of that little trunk, but unfortunately no one saw me take it out that morning, before I came over to Boston.

"The reason I kept my laboratory locked latterly was, to prevent it from being disarranged. Formerly I used to have students in there to help me in making my preparations for the lectures, but they broke so many things that I concluded to do it alone. That is the reason I kept it locked more than formerly.

"I was at home every night, and Mr. Sanderson is mistaken in supposing he saw me coming out of the omnibus alone one night that week. I placed some evidence in the hands of my counsel about where I was at different times, which they have not used. I left the college on Friday afternoon, about 3 o'clock, to come up town. I had had no dinner; but when I came to the place at the corner of Hanover street, called Concert Hall, or Brigham's, where I had occasionally been before to get a bite, I went in and got a chop. I then went to Mr. Kidder's and got into the omnibus. The evening I was able to show where I was, I notified my counsel. I had bought a copy of Humboldt, and stepped into Brigham's to get a cup of tea, as I was going along. I came off in a hurry, and left a book. I had it sent for, and the people recollected the circumstance, and the book was found just where I left it, and by that means I was enabled to fix it that it was Wednesday evening, and prove where I was that evening.

"Will you allow me to say one thing more? I have felt more oppressed by what has been testified against me about those anonymous letters than by any thing else brought against me at this trial. And I will call my God to witness, and if it should be the last word I ever should be allowed to speak, I declare I never wrote those letters. Since they were introduced into this case, my counsel has received a letter in which the writer says he wrote the one signed 'Civis,' that has been used here. A notice was put into the paper calling upon him to come forth, but he has not been found. He may be in this court room, and if he is on this spot, and has a spark of humanity in him, I call upon him to come forward."